

400 N. Capitol Street, N.W., Suite 368
Washington D.C. 20001
(202) 737-5711

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98-206

May 19, 2000

Mr. Michael J. Marcus
FCC/OET
445 12th St. S.W.
Washington D.C. 20554

RECEIVED

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Dear Mr. Marcus,

This letter is in response to your questions regarding alternative higher gain antennas for DBS operations. The standard DBS antenna is the 18" offset feed antenna. Higher gain antennas are manufactured and are readily available in the marketplace. There are two basic types of directive antennas that can be used for this purpose; the offset feed antenna and the flat panel antenna.

The offset feed antenna is the most common type of antenna used in the U.S. for DBS applications. It is available off the shelf in sizes from the standard 18" to 30". The 18" offset feed antenna has sold approximately ten million units in the U.S. alone. The reflector antenna is also manufactured in sizes up to 94" (2.4 meters), which has a gain of 48.5 dB. In the U.S., flat panel antennas are being manufactured with antenna figure of merit 13.5 and 15 dB/K, and are equivalent to 19" and 22" offset feed antennas, respectively. The following data were recently obtained from antenna manufacturers:

Type/Size	Gain (dBi)	G/T*
Offset Feed 18"	34	13
Offset Feed 24"	36.3	> 15.2
Offset Feed 30"	40.1	> 19.1
Flat Panel 16x20"	~34.5	13.5
Flat Panel 18x24"	~36	15

*G/T is the ratio of the antenna gain to the system temperature, also referred to as the "figure of merit"

In summary, aside from the most widely used 18" DBS antenna, a broad range of antennas is currently being manufactured to support video transmissions in the 12.2 - 12.7 GHz band. These antennas have gain ranging from 34.5 to 48.5 dB. If there are any questions or comments, additional information can be found at the following URL's: <http://www.satcomweb.com/passportline.htm> and <http://www.channelmaster.com/pages/dbs.htm>, or please contact the undersigned.



Robert Combs
Director, System Development

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List A B C D E

SATCOM
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SatCom PASSPort™ Mini Plus Flat Panel Satellite Antenna System

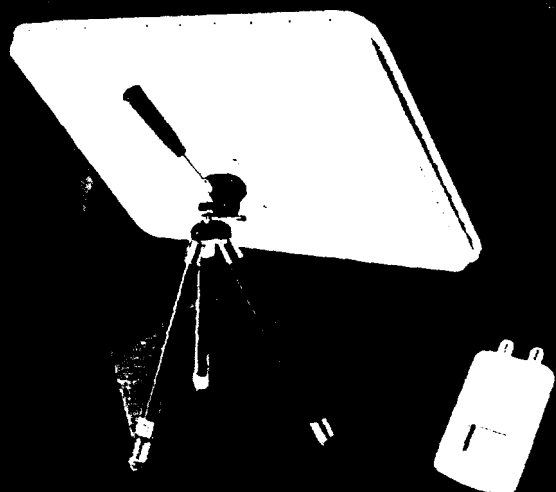
The First Portable Flat Antenna for DBS-TV Viewing Anytime, Anywhere



The SatCom PASSPort™ Mini Plus is a unique flat-panel satellite antenna system designed for portable DBS - TV broadcast viewing. Compact and lightweight, it is extraordinarily easy to transport and use - absolutely no assembly is required. The system is compatible with all current mini-dish DBS receivers, and the sleek, unobtrusive design blends harmoniously into any environment. The Mini Plus is ideal for people who want to enjoy satellite television anywhere - camping, boating, or simply relaxing at home.

Unique features

- Compatible with all DIRECTV™ and DishNetwork™ receivers
- One piece system - no assembly required
- Integrated LNB design
- Compact and lightweight for portability
- Low profile offers elegant alternative to concave dishes
- Companion Digital Satellite Seeker makes setup truly "plug, aim, & play"
- Revolutionary Phased Array technology



SatCom PASSPort™ Mini Plus Flat Panel Satellite Antenna System



Digital Satellite Seeker

The Mini Plus package features the smallest SatCom PASSPort, making it easy to transport from place to place for convenient DBS-TV viewing. The antenna's flat architecture is less than one inch thick, measures just 12 by 16 inches and weighs 5 pounds. The SatCom PASSPort Mini Plus is designed with a built-in camera shoe for tripod mounting, and included accessories add everything needed for portability, including Digital Satellite Seeker, carrying case, portable mount, compass and cables.

The PASSPort Mini Plus antenna system features simple "plug, aim and play" setup with help from the Digital Satellite Seeker. A handy companion to any satellite system, it finds the strongest satellite signal quickly and easily - no adjustment necessary. Small enough to fit in a child's hand, the Digital Satellite Seeker features an easy-to-read numerical LCD display and dual high and low readings. Input frequency range is 900 MHz to 2,000 MHz, maximum voltage input is +30 VDC, and resolution is 1/10dB.

Specifications

Input Satellite Frequency:	12.2 - 12.7 GHz
Polarization:	Dual Circular
Integrated Antenna/LNB System G/T:	11.5 dB/K
LNB Output Frequency:	950 - 1450 MHz
LNB Noise Figure:	0.8 dB typical
Phase Noise:	
@ 1 KHz	-58 dBc/Hz
@ 10 KHz	-80 dBc/Hz
@ 100 KHz	-95 dBc/Hz
Conversion Gain and Ripple (Over 36 MHz Bandwidth):	52 - 60 dB +/- 0.5 dB max
L.O. Frequency and Stability:	11.25 GHz +/- 1.5 MHz max
Output Impedance and Connector:	75 ohms F-type female
DC Power Supply:	11.5 - 19V
Antenna Physical Size (length x width x thickness):	12" x 16" x 1.1"
Antenna Weight:	5 lbs
Antenna Mount:	Standard Camera Tripod 1/4-20 thread

Design and Specifications are subject to change without notice. © 11/1999
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SatCom Electronics, Inc.
13400-B Danielson Street
Poway, CA 92064

(858) 486-6600
fax (858) 486-6699
Web Site:
www.satcomweb.com

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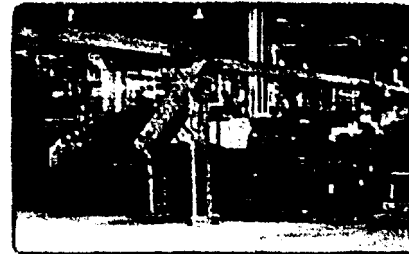
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Direct Broadcast Satellite
































































In addition to its own brand, Channel Master is an original equipment manufacturer (OEM) of Direct Broadcast Satellite (DBS) reception products for large international corporate customers. This product is being manufactured and shipped worldwide.

Proven Capabilities

- Manufacture quality, custom-designed product for satellite industry
- Heavy and light metal fabrication and robotic welding
- Fiberglass compression and injection molding and powder-coat painting
- Product fulfillment (high-volume product assembly and packaging)



Product Matrix

Antenna Size	Mounting Options							
	Universal	Dedicated Roof/Wall	Dedicated Roof	Wall	NPRM	Chimney	Ground	Tower
.35M								
.46M								
.60M								
.66E								
.70E								
.75E								
.75M								
.84E								
.90M								
.96M								
1.0M								
1.2M								
1.8M								
2.4M								

Satellite Distribution Products

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Reception Products from the list below:

Direct Broadcast Satellite Products



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